

Abstract of the Disclosure

5 The present invention relates to a method and system for tiered digital
broadcasting. A plurality of different bit streams representing digital data targeted for
different services is received from a data source. Each bit-stream of the plurality of
different bit-streams is modulated on a plurality of OFDM sub-carriers. Sub-carriers of
different bit streams have different spectral efficiency. The parallel OFDM sub-carriers of
10 each bit-stream are frequency interleaved with the parallel OFDM sub-carriers of the
other bit streams of the plurality of different bit streams such that the parallel OFDM sub-
carriers of each bit-stream are spread over an entire available frequency spectrum. The
interleaved sub-carriers are transformed into time domain for providing a frequency
interleaved OFDM signal. The OFDM signal is then upconverted to the frequency of a
15 broadcasting channel and transmitted. The method and system according to the invention
enables a broadcasting station to transmit multiple bit streams with different spectral
efficiency using one RF channel allowing, for example, simultaneous transmission of
digital TV for fixed and mobile recipients. Frequency interleaving of the OFDM sub-
carriers of each of the multiple bit streams over the entire spectrum of a RF channel
20 substantially reduces the risk that a signal is notched out by multipath distortion or
fading.